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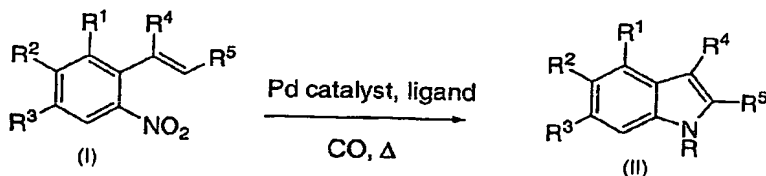
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SUBSTITUTED INDOLES AND A PROCESS FOR PREPARING SUBSTITUTED INDOLES



(57) Abstract: The instant invention is directed to novel compounds of Formulae (I) and (II), as well as a process for preparing compounds of Formula (II). The process comprises a palladium-catalyzed reductive cyclization of a compound of Formula (I) to produce a compound of Formula (II).

INTERNATIONAL SEARCH REPORT

International appli

PCT/US04/17357

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07C 205/37,44,45; C07D 213/64, 215/18,227; 317/62, 401/10.
US CL : 544/363; 546/157,180,300; 549/439; 568/306,424,588,931.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 568/424.

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CAS ONLINE STRUCTURE SEARCH

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3,931,195 A (DYKSTRA et al.) 06 January 1976 (06.01.1976), see for example step a. in examples 2,3 and 5.	1-2
X	Echavarren, A.M. Lewis Acid Catalyzed Reactions of alpha,beta-Unsaturated N,N-Dimethylhydrazones with 1,4-Benzoquinone. Formation of Indoles by a Novel Oxidative Rearrangement. 1990, Vol.55, pages 4255-4260, see especially page 4258, right column, preparation of compound 2.	1-3

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance
"B" earlier application or patent published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search

30 May 2005 (30.05.2005)

Date of mailing of the international search report

14 JUN 2005

Name and mailing address of the ISA/US

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Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

International ap

PCT/US04/173:57

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claim Nos.: 1-2 (both in part)
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Please See Continuation Sheet
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-3

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

Continuation of Box I Reason 2:

The claims relate to an extremely large number of permutations based on the scope of variables being claimed which are not all adequately supported in the description within the meaning of PCT Article 6. Additionally, a preliminary search yielded many novelty-destroying compounds. The claims have been searched to the extent needed to determine patentability of species recited in claim 3.

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-3, drawn to compounds of Formula I.

Group II, claim(s) 4-19, drawn to compounds of Formula II and process of making said compounds.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: They relate to starting materials vs. final products that are very dissimilar in structure as the nitro and vinylic portion in the starting materials is not present in the final products.